



STATE OPERATING PERMIT

for the

APPLICATION OF PESTICIDE

PERMIT NO. SOP-06049

Issued By

State of Tennessee
Department of Environment and Conservation
Division of Water Pollution Control
401 Church Street
L & C Annex, 6th Floor
Nashville, TN 37243-1534

In accordance with the provisions of Tennessee Code Annotated Section 69-3-108 and regulations promulgated pursuant thereto:

Permit SOP-06049 is hereby issued and made available to persons to allow the application of the pesticide, *Bacillus thuringiensis* var, *israelensis* (BTi), to waters of the state provided the activities are in compliance with the terms of this permit.

This permit imposes several restrictions on how and where the pesticide may be applied.

This permit is issued as a result of the application filed on August 16, 2006, in the office of the Tennessee Division of Water Pollution Control and in conformity with approved data submitted to the Department in support of the above application, all of which are filed with and considered as a part of this permit, together with the following named conditions and requirements. This permit authorized the application of the pesticide BTi in accordance with the terms and conditions, reporting requirements, and other conditions set forth herein.

This permit is issued on:
This permit is effective on:
This permit expires on:

December 31 2009

Draft

Paul E. Davis, Director
Division of Water Pollution Control

**STATE OPERATING PERMIT FOR THE
APPLICATION OF PESTICIDE**

TABLE OF CONTENTS

1. INTRODUCTION	1
2. TERMS AND CONDITIONS	3
2.1. PESTICIDE APPLICATION TERMS AND CONDITIONS	3
2.2. PLACEMENT OF SIGNS	3
2.3. PROTECTION OF LISTED, THREATENED, OR ENDANGERED SPECIES	4
3. REPORTING AND RECORDKEEPING.....	5
3.1. REPORTING REQUIREMENTS.....	5
4. TERMINATION OF COVERAGE.....	5
4.1. NOTICE OF TERMINATION (NOT) LETTER	5
5. STANDARD PERMIT CONDITIONS	5
5.1. PROPERTY RIGHTS.....	5
5.2. STATE/ENVIRONMENTAL LAWS	6
6. DEFINITIONS.....	6
RATIONALE.....	1

1. INTRODUCTION

The presences of black fly has been an nuisance in Cocke and eastern Sevier counties for a number of years. The Department of Entonomolgy & Plant Pathology of the University of Tennessee has proposed and the General Assembly of the State of Tennessee has enacted a law (Tennessee Code Annotated 43-6-501) to conduct a one year study on how to suppress the black fly.

Adult black fly (*Simulium jenningsi*) populations are most effectively suppressed by reducing the larval populations in rivers and streams in which they develop. *Simulium jenningsi* prefers large streams and rivers as habitat for its aquatic larval. Larvel control is achieved by treating the rivers and streams where the larvae develop with the biological control agent, *Bacillus thuringiensis* var, *israelenis* (BTi). The black fly larvae filter the bacterial protein from the water column. Because most other organisms do not have an intestine pH high or basic enough to activate the toxin, Bti becomes toxic to only black fly larvae upon ingestion.

The Department of Entonomolgy & Plant Pathology of the University of Tennessee has applied for a permit to use BTi to suppress black fly in the Pigeon River, the Little Pigeon River and the French Broad River. The study areas identified in the permit application are at twenty-four discrete locations within the indicated rivers in both Cocke and Sevier counties.. Additional sites may be added upon formal request and approval from the local Environmental Field Office. The potential locations are listed below:

PIGEON RIVER		
Description	Latitude	Longitude
US 27/70 Bridge	35° 57.465' N	83° 10.456' W
TN Route 73 at Grace Baptist Church	35° 56.700' N	83° 10.675' W
O'Neil Road Bridge	35° 55.733' N	83° 10.276' W
Along Pleasant Grove Road	35° 53.830' N	83° 10.814' W
US 321/TN 73 Bridge	35° 52.830' N	83° 11.899' W
Denton Road, downstream of Greasy Cove Road Bridge	35° 50.549' N	83° 11.202' W
Turnout along Hartford Road	35° 49.562' N	83° 10.931' W
Lindsay Gap Road Bridge, Bluffton	35° 48.684' N	83° 10.523' W
Hartford Road at River Adventures Rafting	35° 48.975' N	83° 09.667' W
Hartford Road at Hartford	35° 49.996' N	83° 08.697' W
Little Pigeon River		
Richardson Cove Road Bridge	35° 48.942' N	83° 26.291' W
Along Richardson Cove Road	35° 49.138' N	83° 27.741' W
Along Shinbone Road	35° 49.866' N	83° 28.638' W
Junction Maple Branch Road with TN 416	35° 50.871' N	83° 30.159' W
Along Old Newport Road	35° 52.000' N	83° 31.844' W
Sevierville Road at Creek Ave.	35° 52.335' N	83° 33.049' W

French Broad River		
Description	Latitude	Longitude
Rock Hill Road	35° 57.695' N	83° 09.112' W
US 25/70 Bridge	35° 57.335' N	83° 06.649' W
US 25/70 at picnic area	35° 56.240' N	83° 04.726' W
US 25/70 at Slab Cafe	35° 56.606' N	83° 02.325' W
Route 107 Bridge	35° 55.489' N	83° 01.282' W
Fugate Road in French Broad	35° 54.304' N	82° 59.146' W
US 25/70 Bridge over Wolf Creek	35° 55.189' N	82° 57.347' W

This Tennessee State Operating Permit (SOP) authorizes the University of Tennessee to apply BTi pesticide to waters of the state provided the activities are in compliance with the terms of this permit. Throughout the remainder of this permit, BTi pesticide will be referred to as either BTi or pesticide. This permit imposes several restrictions on how and where pesticide may be applied.

An activity covered under this permit is subject to terms, conditions and requirements, which are listed and described briefly below.

Applicability of this permit is to apply pesticide. The pesticide shall be limited to Vectobac® 12AS. The applicator must follow all label requirements for compliance with both state and federal pesticide regulations and apply the pesticide according to label directions. This requirement is to insure the pesticide used is approved for use in state waters and is applied according to label instructions.

The application of the pesticide shall be by persons [licensed](#) by the [Tennessee Department of Agriculture](#) (TDA) and must meet all applicable [regulations of the Tennessee Department of Agriculture](#). This requirement is to insure the applicators of the pesticide are trained in the use of this pesticide.

The application rate is based on the waterway's flow and the desired area of control. Operational field rates are typically in the range of 7.5 to 25 parts per million (ppm) of pesticide for a 1-minute application. The application frequency could be every other week between April and October during the permit.

The permittee will report to the division when the pesticide applications are completed. No later than 60 days after the completion of the last seasonal pesticide application project, or November 30th of the year the application is performed (whichever is earlier), the owner/applicator or person will provide to the division two copies of a report. One copy to each of these address:

Knoxville Field Office 3711 Middlebrook Pike Knoxville, TN 37921 Phone: 865-594-6035	Division of Water Pollution Control 6th Floor L & C Annex 401 Church Street Nashville, TN 37243 Phone: 615-532-0684
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This report shall contain, at a minimum, a description of the just completed activity detailing such information as outlined in subpart 3.1 below. Complaints and/or adverse impacts associated with the application of pesticides shall be reported to the Knoxville Field Office within 24-hours. Additionally, fish kills shall be reported to the division, TWRA and TEMA as soon as possible and within 24-hours.

2. TERMS AND CONDITIONS

2.1. Pesticide Application Terms and Conditions

Usage of pesticide shall be limited to Vectobac® 12AS or similar pesticide on either the State of Tennessee's list or the [Environmental Protection Agency's list of registered pesticides](#).

Application of pesticides shall only be by persons [licensed](#) by the [Tennessee Department of Agriculture](#) and must meet all applicable regulations of the [Tennessee Department of Agriculture](#).

The applicator must follow all label directions, being mindful of the enforceable state and federal requirements.

The applicator must be aware of any label and or water use restrictions in the area of proposed application of pesticides. Water use restrictions include, but are not limited to: water used for domestic and/or industrial water supply, irrigation, livestock and wildlife watering, swimming or fishing. If water use restrictions are applicable, the applicator must contact the division and any potentially affected persons located in the application vicinity (one mile radius) and inform them of the proposed application of pesticides.

Under no circumstances, may the contiguous application area be more than 10 acres.

At least 7 (seven) days prior to the actual spraying of the pesticide the permittee shall notify the division's local Field Office.

2.2. Placement of Signs

The permittee shall place and maintain at least 2 (two) signs around the affected area before and during application, and at least one week after application of pesticide.

The signs should advise the public that pesticides are being used, the type of pesticide, and any applicable warnings, which are especially important at bathing beaches and other areas of common access. These signs must contain the name of the owner/applicator and person(s) to whom the permit is issued and a contact phone number(s). These signs should be at a minimum of one foot by one foot (1' by 1') with one-half inch (1/2") letters, have a white background with black letters, made of waterproof material, and readable both from the water and from the shore.

Alternately, a comprehensive signage plan may be implemented upon review and approval of the Knoxville Field Office.

The signs are to provide notice to the public as to the nature of the pesticide application, and that the application is regulated by the Tennessee Department of Agriculture and the Tennessee Department of Environment and Conservation, Division of Water Pollution Control. The following is given as an example of the minimal amount of information that must be included on the sign:

<p>PESTICIDE APPLICATION AREA (TYPE/NAME OF PESTICIDE) (APPLICATION DATE) (APPLICABLE WARNINGS) UNIVERSITY OF TENNESSEE 865-974-7950 SOP PERMIT No. SOP-06049 TENNESSEE DIVISION OF WATER POLLUTION CONTROL 1-888-891-8332 KNOXVILLE FIELD OFFICE TENNESSEE DEPARTMENT OF AGRICULTURE 1-800-628-2631</p>
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2.3. Protection of Listed, Threatened, or Endangered Species

This permit does not authorize the application of pesticides or application-related activities that are likely to jeopardize the continued existence of any species that are [listed as endangered or threatened](#) under the [Endangered Species Act](#) (ESA) or result in the adverse modification or destruction of habitat that is designated as critical under the ESA. You are not authorized to apply pesticides or perform application-related activities if such activities would cause a prohibited “take” of endangered or threatened species (as defined under [Section 3](#) of the [Endangered Species Act](#) and [50 CFR §17.3](#)), unless such takes are authorized under [Sections 7](#) or [10](#) of the [Endangered Species Act](#). Issuance of a Notice of Coverage (NOC) under this permit will constitute confirmation of the division’s finding that the application of pesticides or application-related activities authorized under this permit are not likely to result in the taking of threatened and endangered species.

Should the division later determine that this permit would result in the taking of threatened or endangered species, or are otherwise not in compliance with the [Endangered Species Act](#), the director, after written notification to the permittee, shall either:

Notify the permittee that it must modify its application of pesticides or application-related activities such it will not result in the taking of threatened and endangered species and otherwise be in compliance with the Endangered Species Act. The permittee shall have 7 days after such notice to make and implement such modifications to the application of pesticides or application-related activities. Should a longer time be required, the permittee shall submit to the division’s local Field Office a brief summary of the proposed modifications, including a timetable for implementation.

3. REPORTING AND RECORDKEEPING

3.1. Reporting Requirements

No later than 60 days after the completion of the last seasonal pesticide application project or by November 30th of the year of application, whichever is earlier, the permittee will provide two copies of a report containing a description of the just completed activity detailing such information as treatment dates, type and amount of pesticide actually applied, the extent of the area treated, and type and duration of the application. The reports shall be sent to the division's central office and local field office at the addresses listed in Section 1. Complaints and/or adverse impacts associated with the application of pesticides shall be reported to the Knoxville Field Office within 24-hours. Additionally, fish kills shall be reported to the division, TWRA and TEMA as soon as possible and within 24-hours.

Knowingly making any false statement on any report required by this permit may result in the imposition of criminal penalties as provided for in [T.C.A. 69-3-115](#) of the Tennessee Water Quality Control Act.

Except for the data determined to be confidential under [T.C.A. 69-3-113](#) of the Tennessee Water Quality Control Act, all reports submitted in accordance with the terms of this permit shall be available for public inspection at the offices of the Division of Water Pollution Control.

4. TERMINATION OF COVERAGE

4.1. Notice of Termination (NOT) Letter

The permittee shall request termination of coverage under this permit by letter if the application of pesticides to the waters of the state has ceased.

The permittee must submit with the letter of termination, the report required in Section 3.1 above (Reporting Requirements). Letter of termination does not relieve the reporting obligation of Section 3.1. The division retains the right to deny termination of coverage under this permit upon receipt of the necessary notice and information from the permittee. If discharges have ceased but coverage under the permit is still in effect because the permittee has not requested termination of permit coverage, the permittee will continue to be responsible for annual permit maintenance fees billed according to [Chapter 1200-4-11 – Environmental Protection Fund Fees](#).

The NOT letter and report shall be submitted to the Water Pollution Control section at the Nashville central office for evaluation and approval.

5. STANDARD PERMIT CONDITIONS

5.1. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege, nor does it authorize any injury to private property nor any

invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

5.2. State/Environmental Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable Tennessee law or regulation under authority preserved by the Section 510 of the Clean Water Act. No condition of this permit shall release the permittee from any responsibility or requirements under other environmental statutes or regulations.

6. **DEFINITIONS**

Applicator is the person who is [licensed](#) by the [Tennessee Department of Agriculture](#) and must meet all applicable [regulations of the Tennessee Department of Agriculture](#) to apply pesticides to the waters of the state.

Critical Habitat for a threatened or endangered species means-

- (i) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 4 of the [Endangered Species Act](#) (ESA), on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and
- (ii) Specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of the ESA, upon a determination by the Secretary that such areas are essential for the conservation of the species.

Director means the director of the Tennessee Division of Water Pollution Control, or an authorized representative.

Discharge, for the purpose of this permit, refers to “discharge of a pollutant” as defined at [40 CFR §122.2](#).

Division means [the Tennessee Division of Water Pollution Control](#).

Endangered species means any species which is in danger of extinction throughout all or a significant portion of its range other than a species of the Class Insecta determined by the Secretary of the Department of Interior to constitute a pest whose protection under the provisions of this Act would present an overwhelming and overriding risk to man.

High Quality Waters are surface waters of the State of Tennessee that satisfy characteristics of high quality waters as listed in [Rule 1200-4-3-.06](#) of the official compilation - Rules and Regulations of the State of Tennessee. Characteristics include waters designated by the Water Quality Control Board as Outstanding National Resource Waters (ONRW); waters that provide habitat for ecologically significant populations of certain aquatic or semi-aquatic plants or animals; waters that provide specialized recreational opportunities; waters that possess outstanding scenic or geologic values; or waters where existing conditions are better than water

quality standards. High quality waters are sometimes referred to as Tier II or Tier III (ONRW) waters.

Impaired Waters (Water Quality Impaired/Water Quality Limited Waters) means any segment of surface waters that has been identified by the division as failing to support classified uses. The division will notify applicants and permittees if the proposed or existing discharge is into, or is affecting, impaired waters.

Monitoring refers to tracking or measuring activities, progress, results, etc.; and can refer to non-analytical monitoring for pollutants by means other than [40 CFR §136](#) (and other than state or federally established protocols in the case of biological monitoring and assessments), such as visually or by qualitative tools that provide comparative values or rough estimates.

NOI is an acronym for “Notice of Intent” to be covered by a general permit and is the mechanism used to “register” for coverage under a general permit.

Pesticide, for the purposes of this permit, means any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant, or desiccant, other than any article that:

1. Is a new animal drug under FFDCA section 201(w), or
2. Is an animal drug that has been determined by regulation of the Secretary of Health and Human Services not to be a new animal drug, or
3. Is an animal feed under FFDCA section 201(x) that bears or contains any substances described by parts 1 or 2 of this definition.

Take under the [Endangered Species Act](#) (ESA) means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect any endangered or threatened species, or to attempt to engage in any such conduct prohibited by the ESA.

Threatened species means any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Water Quality-Limited Segments: Those water segments that do not or are not expected to meet applicable water quality standards even after the application of technology-based effluent limitations required by sections 301(b) and 306 of the Act. ([40 CFR §130.2\(j\)](#)) Technology-based controls include, but are not limited to, best practicable control technology currently available (BPT) and secondary treatment.

Waters of the State or simply *Waters* is defined in the [Tennessee Water Quality Control Act](#) and means any and all water, public or private, on or beneath the surface of the ground, which are contained within, flow through or border upon Tennessee or any portion thereof except those bodies of water confined to and retained within the limits of private property in single ownership which do not combine to effect a junction with natural surface or underground waters.

“You” and *“Your”* as used in this permit is intended to refer to the permittee, the applicator, or the discharger as the context indicates and that party’s responsibilities (e.g., the city, the county, the flood control district, the U.S. Air Force, etc.).

RATIONALE

The University of Tennessee
SOP-06049
Cocke and Sevier Counties, Tennessee

Permit Writer: Mr. Jim McAdoo

I. PERMITTEE

Various locations in the Pigeon River, the Little Pigeon River and the French Broad River in Cocke and Sevier Counties, Tennessee

Official Contact Person:
Dr. John Moulton
Assistant Professor
University of Tennessee
865-974-7950

Industrial Classification:	N/A
Permittee Rating:	Minor

II. PERMIT STATUS

Application for a permit was received August 16, 2006

Watershed Information

Environmental Assistance Center: Knoxville
Primary Longitude: Primary Latitude:
Hydrocode: 6010106 Watershed Group:
Watershed Identification: Pigeon and French Broad Rivers

III. ACTIVITY AND RECEIVING WATERS

The Department of Entomology & Plant Pathology of the University of Tennessee has proposed and the General Assembly of the State of Tennessee has enacted a law (Tennessee Code Annotated 43-6-501) to conduct a two year study on how to suppress the black fly using *Bacillus thuringiensis* var. *israelensis* (BTi).

IV. NEW MONITORING REQUIREMENTS

Activities considered in this rationale sheet are application of pesticide to the waters of the state for the purpose of studying black fly suppression using BTi. Tennessee's Water Quality Control Act requires that the application of pesticides to the waters of the State of Tennessee be permitted by the Department of Environment and Conservation. This Rationale Sheet describes and gives the basis for permit conditions for the proposed application of pesticides to waters of the state.

The division recognizes that if label requirements and terms and conditions of this permit are not followed, application of pesticides could cause secondary environmental impacts, temporary exceedance of water quality criteria, and partially and temporarily impair designated uses of a receiving water body. However, at the same time, presence of black fly in the area provide an opportunity to study suppression methods. Application of pesticides causes destruction of targeted organisms. Based on the permit writer's judgment, the terms, conditions, limitations, monitoring requirements and management plans proposed below, will result in a balanced approach that will improve water quality on a long-term basis, without causing permanent degradation to the waters of the state.

The permit requires the following to protect the designated uses of the receiving water:

- Use of pesticides that are on the State of Tennessee's list of registered pesticides;
- Compliance with Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA);
- Application of pesticides by a licensed applier;
- That the applicator follow all label requirements;
- That the pesticide application is limited to the creation of an effective control zone; and
- That the transitory water quality impact is minimized.

The permit requires site inspections prior to treatment and prior notification of treatment. The permit also requires that the permittee become aware of any water use restrictions and that the permittee contact potentially affected persons prior to treatment.

Monitoring Requirements

The permit requires that the application of pesticides shall be monitored by the permittee so as to document the area of application, the average water depth, the amount of pesticide applied and the calculated water column concentration of pesticide.

V. ANTIDegradation

Tennessee's Antidegradation Statement is found in the Rules of the Tennessee Department of Environment and Conservation, Chapter 1200-4-3-.06. This statement outlines the criteria for the two types of high quality waters. Outstanding National Resource Waters (ONRWs), as designated by the Water Quality Control Board, are commonly referred to as Tier 3 waters. Other high quality waters, as identified by the division, are commonly referred to as Tier 2 waters. Other surface waters not specifically identified and/or designated as high quality are referred to as Tier 1 waters. Some Tier 1 waters may be identified by the division as not meeting existing criteria and appear on a list of impaired waters per Section 303(d) of the Clean Water Act.

The division has made a stream tier determination of the receiving waters associated with the subject pesticide application and has found the receiving streams to be high quality waters. The department has maintained, and shall continue to assess, the water quality of the stream to assure that the water quality is adequate to protect the existing uses of the stream fully, and to assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for non-point source control.